

WHAT IS CLAIMED IS

1. A magnetic core composition for an xDSL modem transformer having a main component comprised of MnO: 22.0 to 34.5 mol% and ZnO: 12.0 to 25.0 mol% and the rest of substantially  $\text{Fe}_2\text{O}_3$ .

2. The magnetic core composition for an xDSL modem transformer as set forth in claim 1, having a main component comprised of MnO: 23 to 33 mol% and ZnO: 13 to 24 mol% and the rest of substantially  $\text{Fe}_2\text{O}_3$ .

3. The magnetic core composition for an xDSL modem transformer as set forth in claim 1, having a main component comprised of MnO: 23.8 to 24.2 mol%, ZnO: 23.0 to 23.4 mol%, and  $\text{Fe}_2\text{O}_3$ : 52.6 to 53.0 mol%.

4. The magnetic core composition for an xDSL modem transformer as set forth in claim 1, having a main component comprised of MnO: 26.1 to 26.5 mol%, ZnO: 20.1 to 20.5 mol%, and  $\text{Fe}_2\text{O}_3$ : 53.2 to 53.6 mol%.

5. The magnetic core composition for an xDSL modem transformer as set forth in claim 1, having a main component comprised of MnO: 23.0 to 23.4 mol%, ZnO: 23.4 to 23.8 mol%, and  $\text{Fe}_2\text{O}_3$ : 53.0 to 53.4 mol%.

6. A magnetic core for an xDSL modem transformer having a main component comprised of MnO: 22.0 to 34.5 mol% and ZnO: 12.0 to 25.0 mol% and the rest of substantially  $\text{Fe}_2\text{O}_3$ .

7. The magnetic core for an xDSL modem transformer as set forth in claim 6, having a main component comprised of MnO: 23 to 33 mol% and ZnO: 13 to 24 mol% and the rest of substantially  $\text{Fe}_2\text{O}_3$ .

8. The magnetic core for an xDSL modem transformer as set forth in claim 6, having a main component comprised of MnO: 23.8 to 24.2 mol%, ZnO: 23.0 to 23.4 mol%, and  $\text{Fe}_2\text{O}_3$ : 52.6 to 53.0 mol%.

9. The magnetic core for an xDSL modem transformer as set forth in claim 6, having a main component comprised of MnO: 26.1 to 26.5 mol%, ZnO: 20.1 to 20.5 mol%, and  $\text{Fe}_2\text{O}_3$ : 53.2 to 53.6 mol%.

10. The magnetic core for an xDSL modem transformer as set forth in claim 6, having a main component comprised of MnO: 23.0

to 23.4 mol%, ZnO: 23.4 to 23.8 mol%, and Fe<sub>2</sub>O<sub>3</sub>: 53.0 to 53.4 mol%.

11. A magnetic core for a transformer comprising  
a bottom plate,  
a columnar center leg rising from an approximate center  
of said bottom plate in a first direction, and  
an outer leg rising from said bottom plate surrounding  
at least the two sides of the center leg in the first direction  
separated by a predetermined space,  
a height of the center leg being lower than a height of  
said outer leg by exactly a predetermined gap and a through gap  
of substantially the same height as the height of the center leg  
being formed at part of the top of said outer leg.

12. The magnetic core for a transformer as set forth in  
claim 11, having a main component comprised of MnO: 22.0 to 34.5  
mol% and ZnO: 12.0 to 25.0 mol% and the rest of substantially  
Fe<sub>2</sub>O<sub>3</sub>.

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